

**Smallpox at Gloucester : a reply to Dr. Coupland's Report : (reprinted from "The reformer", December 1897, and January and February, 1898) / by W.R. Hadwen.**

### **Contributors**

Hadwen, Walter R. 1854-1932.

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# SMALLPOX AT GLOUCESTER.

A REPLY

TO

## Dr. COUPLAND'S REPORT

(REPRINTED FROM "THE REFORMER", DECEMBER, 1897,  
AND JANUARY AND FEBRUARY, 1898.)

BY

### W. R. HADWEN, M.D.,

*Licentiate of the Royal College of Physicians, London ;  
Member of the Royal College of Surgeons, England ;  
Licentiate of the Society of Apothecaries, London ;  
Gold Medallist in Medicine and in Surgery ; etc.*

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## SMALLPOX IN GLOUCESTER.

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THE long-looked-for report of Dr. Coupland respecting the Gloucester epidemic of smallpox 1895-6 was only published in the latter part of November, 1897, that is, seventeen months since the official enquiry closed, and more than twelve months since the Royal Commission on Vaccination issued their final report.

### NO CRITICISM ALLOWED.

Beyond half-a-dozen paragraphs quoted by the Royal Commissioners, no information appears to have been supplied to them by Dr. Coupland concerning one of the most remarkable epidemics of modern times and the most fatal in English history. The report goes forth to the public uncriticised, and its author has been liberated from the wholesome safeguard of cross-examination which so effectually emasculated the report of the Sheffield outbreak presented by Dr. Barry. Judging by the breakdown of one official witness after another when their evidence came to be submitted to the searching scrutiny of certain members of the Royal Commission, one is inclined to view everything vaccinal hailing from the hallowed realms of officialdom with some degree of reserve, and it is to be regretted that Dr. Coupland's conclusions, as well as his statements and arrangement of facts, should have been allowed to be delayed until long after the Royal Commission rose for the last time.

This fact is the more remarkable seeing that Dr. Coupland states in the opening paragraph of his report that he proceeded to Gloucester on March 30, 1896, "to make enquiry into an epidemic of smallpox which was then in progress there . . . at the request of the Chairman of the Royal Commission on Vaccination." We may well wonder then how it is, if the Royal Commission considered the Gloucester epidemic of sufficient importance to send a special Commissioner at great public expense to "make enquiry" concerning it, and to authorise him to spend five months in prosecuting that enquiry, that they should have declared four months after their official investigator had returned from his labors: "We have not received as yet the report of Dr. Coupland from Gloucester," and deliberately close their own report without apparently troubling themselves about such an important document.

### DR. COUPLAND'S INSTRUCTIONS.

And what was to be the nature of Dr. Coupland's enquiries?

His "instructions" appear to have been of the most precise and limited character:—"Primarily, to what extent the epidemic had prevailed, what classes of the community had been attacked, and especially to determine the incidence and fatality of the disease as regards the ages of those attacked, and their condition as to Vaccination, ascertaining also as far as possible the facts as to the rate of attacks in each class amongst those exposed to infection, and the type of the attack amongst the sufferers." And this, forsooth, is the utmost range of a professedly Epidemiological enquiry conducted on behalf of a presumably scientific Royal Commission on Vaccination at the close of the nineteenth century!

Practically, the range of enquiry was to be strictly limited to the question: Are the subjects of smallpox vaccinated or not; at what rate are the respective classes attacked, and at what rate did they die? It is more than probable, judging by a rough glance I have taken at the facts, that had the enquiry been confined to a distinction as between Protestants and Roman Catholics instead of between vaccinated and unvaccinated persons, similar tables could have been drawn up, similar percentages could have been worked out, and the Catholics would have scored heavily in the result. I am confident, so far as Gloucester is concerned, that the Catholics can, if they desire, claim their form of religion to be a far better protection against smallpox than Protestantism. Or the Royal Commission might have adopted another plan, namely, that of Dr. Murchison with regard to typhus fever. The patients admitted into the London Fever Hospital were classified by him according to their station in life; those who could pay; those who were paupers; and those not paupers but unable to pay. And the range of mortality was most striking. The better the social position the greater were the chances of recovery.

#### A GRAVE FALLACY.

Thus there is a fallacy, and a grave fallacy underlying the whole of Dr. Coupland's Report; it takes only one set of facts, namely, those of Vaccination, into consideration, and deliberately ignores or skims over those other facts, which, in the opinion of the foremost epidemiologists of our time, are really vital to the issue concerning smallpox and its prevention. In no other disease but that of smallpox would such playing with statistics be allowed; one can only suppose that the pet child of medical orthodoxy of the present day is of too delicate a nature to permit of any other treatment. We may well ask why the conditions of health of individual smallpox sufferers were not enquired into; why we have no remarks as to their social positions; why the sanitary conditions of the patients' surroundings are so carefully avoided; why the treatments of the disease are not carefully and fairly dealt with; why the sanitary arrangements of the elementary schools, so largely concerned in the outbreak, do not receive even a passing notice; and why the most recent official acknowledgments of in-

sanitary conditions in sewerage and house-drains in the infected area are not even alluded to.

Dr. Coupland has been faithful to his "instructions." The Report, consisting of 180 pages, gives tabulated lists of initials of names, and addresses of sufferers, with their ages, type of attack, and vaccinal condition. The lists are then done up again in various small parcels and scattered through the book, and numerous paragraphs are interspersed explanatory of selected cases where the vaccinated or unvaccinated condition of the patients is duly enlarged upon; but just that information which would have served to finally settle the question as to the value or not of vaccination, a question which was ostensibly the primary object of the enquiry, is not vouchsafed. From beginning to end Hamlet is played without the Prince of Denmark. As a scientific exposition of an important subject it is valueless; as a solution of the vaccine problem, or as a genuine, unbiased enquiry into the true causes of the fearful epidemic, it is a dreary and barren waste—an undisguised disappointment to everybody concerned.

#### OFFICIAL WHITEWASHING.

It is true there is an attempt in the first few pages to whittle away certain ugly facts which some of us have again and again exposed, and to apologise for and whitewash a series of official blunders which constitute one of the most serious blots upon municipal administration of which we have any record in this century; but seeing that these excuses are qualified by the confession that it was not within the province of the Commissioner's "instructions" to enquire into allegations of municipal mis-management, the effort resolves itself into a retailing of official apologetics which have already been sufficiently answered.

Dr. Coupland tells us he has "viewed the subject with as impartial a mind as he could." This I do not doubt. As, however, one notices the intense bias which marks the Report throughout, one can only regret that an official who must have found the desire for impartiality conflict strangely with his prejudices and "instructions" should have been appointed to the post of investigator. It is also a matter of regret that apparently the persons to whom he looked mainly for assistance were officials who have been impugned at the bar of public opinion, and that he can find no other names to whom to tender his thanks but those mentioned on page 13, although information of value could have been obtained and was offered from other and presumably less prejudiced sources.

#### VACCINATION A FAILURE.

The broad fact remains that of 1,979 persons attacked in the city of Gloucester with smallpox during the epidemic no less than 1,211—nearly two-thirds—had undergone that operation which the so-called "discoverer" declared, in his petition for money which he presented to the House of Commons in 1802, was "attended with the singularly beneficial effect of rendering through life the

persons so inoculated perfectly secure from the infection of small-pox." In his evidence before a Committee of the House of Commons Jenner again maintained: "It now becomes too manifest to admit of controversy that the annihilation of smallpox, the most dreadful scourge of the human species, must be the final result of this practice." Gloucester, ninety-five years after the utterance of this proud boast, has given the answer, and has proved, upon the unimpeachable evidence of a Government official, that the basis upon which the tyrannical Compulsory Vaccination Act was passed, and under which thousands of England's sterling sons and daughters have suffered, was a fraud of the worst type. Of these 1,211 "protected" persons no less than 120 died. This is how the close of a century's experience illustrates the "modifying" effects of vaccination!

#### RE-VACCINATION WILL NOT PROTECT.

Nor does re-vaccination, according to Dr. Coupland, fare much better, for he records 190 cases of smallpox in this class. It is true he tells us that in 62 out of this total, the operation was "unsuccessful"; but, then, we have always been led to believe that, if the vaccination would not "take," the subject could not take smallpox. Here, however, are 62 distinct and separate proofs of the way in which we have been deceived by one of the many strange shuffles which have bristled over this question like quills upon a porcupine's back. There are several in the list who are recorded as having been vaccinated no less than three times, and who yet contracted smallpox. Fourteen had been re-vaccinated twice. One soldier avers that he was successfully vaccinated no less than seven times, viz., in infancy, twice at Horfield Barracks, Bristol, once each at Aldershot, Dover, Malta, and Bombay, and yet fell a prey to the disease in the late epidemic; but I do not find this fact recorded in Dr. Coupland's list—he simply supplies us with the bare statement, "re-vaccinated eight years ago"!

The mortality in this class was less than among the unvaccinated, or the once vaccinated; but then it must be remembered that the attacks occurred among those who were for the most part in the prime of life, and in whom the disease-resisting powers would be greater than in the much younger persons who formed the greater proportion of the other two classes. With the exception of four persons, the whole of the 190 were under 60 years of age. There were seven cases in which Dr. Coupland acknowledges successful re-vaccination had taken place in from fourteen days to three months, when, according to the very latest medical theory (for which, by-the-by, there is not the slightest scientific ground) vaccination is in its most perfect condition of protective power. In 86 cases there had been successful re-vaccination from fourteen days and under before contracting the disease, when, according to analogy with all other diseases, the cowpox virus in its effects upon the system should have been at its strongest, and if ever it was to resist smallpox at

all, it ought to have resisted it then. If cowpox cannot prevent smallpox when it is most active in the system, how in the world can it do so when its virulent effects are at an end and the vaccine vesicle has become a scar? Of those 86 cases no less than seventeen had confluent attacks of smallpox; all but seven were over sixteen years of age. Had Dr. Coupland troubled to consider other factors in these results the solution would have been simple.

#### RECENT VACCINATION NO GOOD.

There is a further list of eighty-nine cases given by Dr. Coupland of persons vaccinated for the first time within a fortnight of their falling ill with smallpox. The remarks at the close of the previous paragraph apply here also. But there is a striking admission by the official enquirer concerning these cases on page 151, namely, that "it is not possible to assert" from the history of these cases that "vaccination had exerted a distinctly modifying influence upon the disease." In fact, the table shows just the opposite. Such an unexpectedly frank confession must be very disquieting to the army of pro-vaccinists who, for two generations, have indulged in and sedulously published dogmatic assertions of an opposite type. There were only fourteen cases of "discrete" smallpox (the mildest kind) in the whole list, and with the exception of thirteen very indefinitely labelled "mild" (whatever that may mean), every case was either "confluent" or "coherent" smallpox, the type around which the battle of life and death concentrates. Two of these were "malignant," both died, and one of the latter had been successfully vaccinated a full fourteen days before contracting the disease. And yet this case, as with the whole eighty-nine among which were no less than twenty-seven deaths, are, at the behest of a whimsical medical fad, made to swell the lists of the "unvaccinated" sufferers of the Gloucester epidemic!

The incidents of vaccine failure here recorded are precisely similar to those recorded by Dr. Woodville in the old London Smallpox Hospital nearly a hundred years ago, viz., that recently vaccinated persons caught the infection of smallpox just as readily and just as severely as if they had not been vaccinated, or had been vaccinated some time previously. Woodville said, he at first expected that cowpox inoculation would have "anticipated" the action of smallpox contagion, but, he adds: "Numerous facts have, however, proved this opinion to have been unfounded, and that the variolous effluvia, even after the vaccine inoculation has made a considerable progress, have in several instances [he might have said 'many' according to his own appended table] occasioned an eruption resembling that of smallpox." Consequently, in his dilemma, he invented for the first time the excuse so readily resorted to subsequently by the medical profession, that some time must elapse after the operation before vaccination could be deemed protective. But the only conclusion which can, in my estimation,

possibly be drawn from such experience is that there can be no connection whatever between the two diseases. If cowpox and smallpox can mature side by side without the one being in the least degree affected by the other—which was the experience of Woodville in 1800 and the more recent experience of Gloucester in 1895-6—where is the pathological or the practical evidence that cowpox protects against or modifies smallpox?

#### A STRIKING INCIDENT.

So anxious is Dr. Coupland to minimise vaccinated fatalities that, in one notable instance (which appears so to trouble him that he refers to it twice over, viz., on pp. 55 and 144), he actually says that a case vaccinated three weeks and three days prior to taking smallpox "approximates closely to those in the group 'under Vaccination'." After Woodville's dire experiences the fanciful limit of an eight days' start was allowed the cowpox virus, in the hope that by a sort of neck-to-neck race with smallpox incubation, it might drive its antagonist out of the field. The theory was doomed to disappointment. Then the time was extended to twelve days. Even the Medical Officer of Health for Bristol in his report on the smallpox epidemic in that city in 1893-4, p. 19, goes to considerable pains to prove (by theory, of course) that "effectual protection" against smallpox could be attained by giving vaccination twelve days' start of the smallpox fever. That is, allowing twelve days for incubation, vaccination must take place on the day of infection. But, alas, for "science" and theories, this too has proved to be a "hum." Then the prophetic period was advanced to fourteen days. Now, as failure still dogs the footsteps of the cowpox operator, Dr. Coupland would evidently make it three weeks, and one medical stalwart in the City of Gloucester, anxious to "go one better," has even ventured upon the suggestion of twenty-eight days as a convenient demarcating period by which to escape inconvenient possibilities and circumvent ugly catastrophes.

But the unquestionable fact still remains that Dr. Gayton, a pronounced official pro-vaccinist and late superintendent of the Homerton Smallpox Hospital, informed the Royal Commission that after an experience of 12,000 cases his tables showed "that primary vaccination was not protective up to any age." Anyhow, here is the striking illustration referred to above, namely, that of Daisy Sabin, aged four years, living at 5, Linden Road, Gloucester, who contracted smallpox in the confluent form after being successfully vaccinated in six places (not three as stated by Dr. Coupland), by a specially appointed vaccine operator three weeks and three days previously, and died. On the other hand, her sister, aged only sixteen months, unvaccinated, had a "severe attack" (which is an exaggerated description) and—recovered. Why did Dr. Coupland omit that last word in his Report? Would it have made the contrast too striking? This unvaccinated child was not even pitted.

## WILL VACCINATION MITIGATE SMALLPOX?

Ever since the cunning Jennerian shuffle originated by the apostle of vaccination at the bedside of Lord Robert Grosvenor, who narrowly escaped with his life from a confluent attack of smallpox after being vaccinated by Jenner but a few months previously, we have been taught that even if cowpox will not protect from smallpox, it will certainly mitigate the disease and ward off all fear of mortality. Now, how do Dr. Coupland's own figures meet this plausible assertion?

He tells us that of the sufferers that have been vaccinated, 29 had malignant smallpox, and every one died; 223 had confluent smallpox, of whom no less than 70 died. Here is a total of 252 successfully vaccinated persons attacked with the worst types of smallpox, scoring a fatality of 39.3 per cent.!

Besides these, there were the cases of "Alleged Vaccination"; that is, cases where the patients themselves declared they had been vaccinated, but owing for the most part to the vaccine scars being covered by the eruption, and therefore said not to be recognisable by the medical man in attendance, Dr. Coupland cautiously places them in a separate list. There were 40 of such cases, with 16 deaths, a fatality of 40 per cent. They included 7 malignant cases, all of whom died; 21 confluent cases with 9 deaths. That is, 28 cases of the worst types of smallpox is alleged vaccinated persons and 16 deaths—the enormous fatality of 57.1 per cent! They might well be placed in a separate list under the heading of "Alleged Vaccination." Why did not Dr. Coupland search the vaccination registers and make sure about their vaccinal condition? What about the "Unvaccinated" death-rate after this? In the pre-vaccination days of last century, the death-rate in the old London Smallpox Hospital, to which only the worst cases were admitted, was only 30 per cent.!

Of the 89 persons vaccinated within a fortnight of taking smallpox, no less than 27 died. A fatality of 30.3 per cent.! Where, I ask, does the doctrine of "mitigation" come in? Is this the sort of thing that conscientious men and women are being persecuted and imprisoned for? Is this what we are paying hundreds of thousands of pounds annually out of the public rates to maintain?

## THE INCUBATION PERIOD.

This question as to when vaccination becomes "protective" is argued upon the generally received statement that smallpox takes twelve days to incubate. Now, nothing is more difficult than to arrive at a definite conclusion upon such a point, and all time limits in this and allied diseases must be more or less arbitrary. If the incubation period were proved to be shorter than the generally accepted period of twelve days, it would make all the difference to the orthodox theorisings of Dr. Coupland and Co., and the number of vaccinated cases which he relegates to the "unvaccinated" list would have to be taken out and added to the already extensive number of 1,211 admitted vaccination failures.

Now, there is a very remarkable case bearing upon this subject, namely, that of A. J. M., 7, Bedford Street, Gloucester, male, aged 20; No. 109 in Dr. Coupland's list. The patient, a sculptor, had been residing in Newmarket, and came direct from there on Saturday night, February 8th, 1896. He was in good health. There was not at that time, not at any time previously, any smallpox in the town or neighbourhood whence he came, nor has there been any case since. The house in which he took up his residence in Gloucester had three bedrooms, and a front and back sitting room, besides underground kitchen. There were living in it already nine persons, viz., his father, 2 elder sisters, a brother-in-law, and five children, aged 1, 4, 7, 10, and 15 years. The mother was suckling the babe. With the exception of the father, vaccinated in infancy, all were unvaccinated. There was no smallpox in the house nor in the street. The young man started work on Monday morning, the 10th. To reach his work he had to pass through the centre of the smallpox district. On Wednesday night, the 12th, he was taken with a shivering fit. On Thursday night, the 13th, he vomited. On Friday, the 14th, smallpox appeared upon the skin, and on Sunday, the 16th, he was removed to the hospital. Within a week he was dead.

Now, here is an absolutely clear case where the incubation period could not possibly have been more than five days at the outside, more probably three, and it destroys all faith in the generally accepted notion that smallpox takes twelve days to incubate, and consequently knocks the bottom out of the whimsical theory in regard to the period to be allowed for "effectual protection." One would have thought this would have been a most suitable and important subject for a scientific Government investigator to inquire into. But what will the public think of official investigations when they learn that the only comment Dr. Coupland has to offer is: "Mother prevented successful vaccination immediately after it was attempted in infancy"? Where Dr. Coupland picked up this bit of gossip I do not know. Every living relative denies the statement. He would, I suppose, wish the public to infer that had not the mother thus emulated the example of the wife of King Edward I., the dose of cowpox filth inoculated 20 years ago (which by the by, is supposed not to "protect" longer than seven years!) would have saved him. But what about Daisy Sabin? Why did she die? Why did her little unvaccinated sister live? And how is it that of all the unvaccinated people crowded in the same house with A. J. M.—four of them under ten years of age—not one contracted the disease? These are questions which Dr. Coupland in his wisdom leaves unanswered.

#### THE PERSONAL CONTACT THEORY.

On page 34 of his Report, Dr. Coupland deals with the "Early history of the outbreak." Like many other historians, he arranges his facts upon the basis of a preconceived idea. It is not a

question with him of gleaning every fact that bears upon the history, and of allowing those facts to speak for themselves. He has a theory to establish, and he proceeds to establish it in his own way.

That theory may be best expressed by quoting the words of Dr. Campbell, the Medical Officer of Health for the City of Gloucester, to whom Dr. Coupland declares he "is indebted for this information." On page 6 of his Annual Report to the Gloucester Urban Sanitary Authority for 1896, he says:—"A great deal has been said about the alleged insanitary condition of the City, and statements have been made to the effect that this was really the cause of the epidemic. I have no hesitation in characterising these statements as perfectly untrue. . . . It is well known to all experts on this subject that the Exanthemata, *e.g.*, smallpox, scarlet fever, and the others are not produced *prima facie* by any of these causes, but are communicated by persons to others, and that in this way alone the disease is spread." That is, the disease cannot arise *de novo*, but must be imported by some individual into a neighbourhood, and, given the importation, all that remains for its propagation is continued infection from person to person. Hence, it follows as a natural sequence of the argument: Protect the individual by a "typical," "foveated," "circumscribed" vaccine scar possessing a "diameter" measured according to the whim of the operator, and of "recency" which depends for its value upon whether the individual subsequently takes smallpox or not, and he may confront even the insanitary horrors of the eighteenth century so graphically described by Macaulay.

Thus it is Dr. Coupland's "History" contains no note of insanitary or other conditions, and, as in the instances I have already drawn attention to, even certain vaccination details which decidedly came within the scope of his "instructions," and which would have thrown a very different light upon the medical theory he seeks to establish, are passed by unnoticed.

#### "THE BEGGAR'S DISEASE."

Less dogmatic seekers after truth might with some reason argue that that which arose *de novo* at some time in the history of mankind may not improbably arise *de novo* again. That that which is known as the "Beggar's Disease" in Austria may be equally the "Beggar's Disease" in other countries of the world.

That that which has followed in the wake of the sword and bloodshed in all ages, which accompanied the "glories" of the American War of Independence, and which claimed more victims than the battle-field in the ravages of the Crimea; which formed the dark background to the triumphant marches of the German Army in 1870, increased tenfold the horrors of the Siege of Paris, and plagued our warriors at Tel-el-Kebir, might after all be a disease having some connection with an atmosphere charged with foul decomposing gases and putrescent matter, and which pointed

to a lack of wholesome conditions of life with the added evils of panic and terror.

The history of the Sheffield epidemic of 1887 might have provided Dr. Coupland with food for reflection, for in that town—the best vaccinated of modern times—no less than 7,000 persons were struck down with smallpox. The disease played its havoc over a midden ridden area of 135 acres, where no individual above the social position of a railway servant was attacked by the disease.

But Dr. Coupland has his “instructions,” and armed with a theory he proceeds to its elucidation. It never appears to have occurred to Dr. Coupland that it might have been as well, during his five months’ stay in the neighbourhood, to have verified the following information with which he had been supplied by the above-named city official.

#### THE FIRST CASE OF SMALLPOX.

“The early history” begins:—“Although during the past few years smallpox has prevailed in various parts of the country in more or less direct communication with Gloucester, and especially in places so nearly related to it as Birmingham, Bristol, and Stroud, it was not till the autumn of 1895 that the city became markedly infected. In the month of June there had been notified a case of a Midland Railway official, who was believed to have contracted the disease at Burton-on-Trent. He was promptly isolated, and no further case arose in connection with his attack.”

Now, on making enquiries I found there was no case of smallpox at Burton-on-Trent either at that time, before, or since. The official (who, by the way, was vaccinated) had not come in contact with any case of smallpox on the occasion of his brief visits to that town two and six days respectively prior to his attack, nor at any other place. Besides, the limit of only six days before the attack would hardly suit Dr. Coupland’s theory of twelve days’ incubation. There was, however, an offensive sewage manhole right opposite his front door, which had been most objectionable to him for a considerable time. He had three unvaccinated children, age two, four, and six years. One of them—the youngest—slept in bed with him the night before he was taken to the hospital, the rash being then upon him; but none of the unvaccinated children contracted the disease. So the first case, when Dr. Coupland’s omissions are supplied, does not go very favourably for the “personal contact” theory, nor yet for vaccination.

#### THE SECOND CASE.

Dr. Coupland continues:—“The next case (in August) which became known, was of a lad employed on the premises of a Mr. B., living in the Midland Road. Mr. B. was a commercial traveller, and although he does not appear to have contracted smallpox himself, it is highly probable he was the medium of its importation into the City, and of the infection of one or more members of his

family whose cases were not notified. The lad referred to lived in Goodyere Street, and was not known to have infected others."

As in the case of the Midland Railway official, Mr. B., it will be seen, is supposed in some mysterious manner to have "imported" smallpox into the city, although he had not suffered from smallpox himself. Dr. Coupland has not the remotest idea as to the locality from whence Mr. B. "imported" the disease, but—"he was a commercial traveller." This appears to be the key to the situation, and to have opened up infinite possibilities to the medical scientific mind. Mr. B. is charged with "infecting one or more members of his family." To be exact, only one was "infected"—his daughter. One other case "infected," supposedly from the same source, was the lad who worked by day upon the premises. Dr. Coupland does not stay to discuss why, if smallpox can be conveyed in this subtle manner, only these two subjects were "infected," or why the lad, who slept every night at his own house, where neither father nor mother had been vaccinated since infancy, and where two unvaccinated children under ten resided, did not in his turn "infect" any of this "inflammable material." From first to last no other case occurred either in the house or the street.

#### PRE-EPIDEMIC SMALLPOX.

Moreover, it may be argued, if smallpox can be conveyed so mysteriously from person to person, how is it that Gloucester had no epidemic in 1890? Six cases were known to the authorities in that year. They had no connection with one another. There was no evidence of any "importation." Each case came in contact with others, and yet there was no "conflagration." The Medical Officer of Health in his Annual Report, says:—"The first two cases happened in a small house occupied by a large family." Is it possible that over-crowding in this and other instances had anything to do with the result? For does he not admit on p. 7 of his Report, 1896: "Overcrowding is always an important fact in dissemination of smallpox"?

In 1893 three more cases occurred; the Medical Officer of Health wrote in his Annual Report, page 14:—"A severe epidemic of the disease has been raging in Birmingham on one side of us, a good few cases in Stroud near us, and I believe that there are a great many cases at Bristol, so that we are in a circle with many cases around us." But yet in spite of constant communication with this city—in spite of cases of sporadic smallpox in the city itself—in spite of its "unprotected" condition, smallpox declined to "catch on." Why then should a problematical importation by "a commercial traveller" in 1895 start an epidemic of smallpox, and yet fail to do so in 1890 and 1893? It never seems to occur to Dr. Coupland that some other theory than personal contact is necessary in order to create such a result; and moreover, as the railway official, and Mr. B., and Miss B., and the lad were all vaccinated, it is hardly fair to charge so much at the door of the unvaccinated in Gloucester, especially when all the

unvaccinated who were, as I have shown, brought in contact with these early cases, declined to contract the disease.

In 1894 smallpox still cropped up within the confines of the city. Seven cases were notified. The Medical Officer of Health states in his Annual Report:—"None of the cases seemed connected with each other, but arose now and again without any communication." This is a flat contradiction of the whimsical theory he propounds two years later, as quoted on p. 11. No definite proofs of "importation" could be discovered. Gloucester was as unvaccinated then as a year later. Still there was no epidemic.

#### A SUGGESTIVE FACT.

Now I ventured a suggestion in the case of the Midland Railway official of a foul-smelling street ventilator immediately opposite his front door as a possible guide to the starting-point of smallpox somewhat nearer home than Burton-on-Trent. I will now suggest a solution in the case of Mr. B. Some considerable time after Mr. B. and his family had vacated their house, it became necessary in view of alterations to inspect the drains. And what was the discovery? The drain-pipes were riddled in every direction and lay, on an average, only eighteen inches below the soil. There were but three sound drain-pipes out of the whole number. The inmates had been living in an atmosphere of sewer-gas, and the susceptible ones, I take it, suffered from blood poisoning in consequence, which manifested itself upon the body in the form of smallpox. But the possibility of the existence of such conditions or their probable connection with a zymotic disease does not appear to have entered into Dr. Coupland's calculations. The country must be searched for an "importation," whilst a not improbable cause is lying unheeded under the very nose of the Medical Officer of Health.

Dr. Coupland gives his readers a diagram in order to graphically illustrate this "personal contact" theory. The third case is traced to "B." in this way: he was "a fellow shopman" of the young man who was courting the sister of the "infected" daughter of Mr. B. Quite a sort of "House that Jack built." Dr. Coupland admits that he does not know "whether she actually visited the shop while still infectious." But the "singular coincidence in this indirect relationship" (he might have said *very* "indirect") is quite sufficient evidence, apparently, for a scientific man with a theory to establish. Accordingly, W. S., who never visited B.'s house, but had been ailing for several weeks, and was living at the time within the area of foul-smelling manholes, is diagrammed as "No. 3."

#### UNFORTUNATE "LINKS."

No. 3 is next credited with infecting three more whose initials and addresses are given. Dr. Coupland calls one of the three "the next link," which consisted in "the probable infection of a young girl [called "No. 5."] the friend of No. 3, who was employed in

the K. family in Derby Road . . . the infant she nursed being attacked a few days later."

The unfortunate part of this "link" is No. 3 denies absolutely that No. 5 was a "friend" at all. He did not know her, had never come in contact with her; had never spoken to her in his life. The girl not only corroborates this statement of No. 3, but declares in addition she was never "nursemaid in the K. family"; had nothing to do with the baby; and although she had called at the K.'s on a few occasions, she had not visited their house for more than three weeks prior to her attack; she therefore cannot be held responsible for "infecting" Mrs. K.'s baby. In fact, as I have discovered since, Mrs. K.'s baby, contrary to Dr. Coupland's statement, had the disease at least one day before No. 5, although not notified until afterwards. Still more extraordinary is the fact that of the two other cases which No. 3 is charged with "infecting," viz.: No. 4 and No. 6, the first he had never known or come in contact with until admitted into the smallpox hospital within two days after being admitted himself; and the second person he has never seen or heard of in his life. In fact, it is absurd to suppose that No. 3 could have infected the latter, for he had already been in the hospital twenty-six days before she was attacked!

Here again surrounding and personal conditions are unheeded by the historian. In the case of the girl No. 5, for instance, she was a subject highly susceptible to zymotic influence. Her age was 16. She was already scarred by chicken-pox, had had measles three times, and scarlet fever once. She lived in an insanitary district, in a tiny house of four rooms, containing father, mother (neither revaccinated), and six children besides herself. At the time of her attack five occupied one bedroom ten feet square. Two of the children under 13 years of age, unvaccinated, slept with her up to the day she was removed to the hospital, yet neither of the latter, nor anyone else in the house took smallpox. Moreover, No. 5 had been vaccinated in infancy, she had four large and distinct marks which could be seen clearly at a distance of ten feet, and yet Dr. Coupland actually credits her in his Official List with being "Unvaccinated"!

#### MORE UNFORTUNATE LINKS.

Dr. Coupland continues his "History":—"In October there died at a neighbour of the K.'s the child E. M., eight years of age, from what was certified as 'malignant measles.' She was unvaccinated, and had been taken ill on October 21st." As this instance of mistaken medical diagnosis was the first unvaccinated case (excepting the baby) since June, Dr. Coupland carefully records it, although he had equally carefully omitted the not unimportant information that the previous sufferers had been vaccinated! He goes on:—"In the first week in November two of the children, and subsequently the father, were attacked with smallpox and removed to the hospital (Nos. 9, 10, and 12)." The "infection"

of all these is placed to the credit of No. 5. Now comes a difficulty in the interesting "link." Dr. Coupland says:—"It is hardly consistent with the ordinary ideas of the incubation period of smallpox to believe that the child E. M. was directly infected by No. 5, although it is certain by the fact that this girl [No. 5] did come into the house before her illness was declared. She was removed to hospital on September 28, *i.e.*, twenty-three days before the child was taken ill in the M. family." So that in spite of the appallingly long period to which Dr. Coupland is obliged to stretch the time of incubation in order to make it fit in with his theory and complete his list of "singular coincidences," he is "*certain*" No. 5 "infected" the child because "the girl came into the house before her illness was declared." But here again Dr. Coupland is at sea, the parents of the child declare they never knew the girl, and that she never at any time came into their house. Nor did his children ever visit the girl's house, or even K.'s house, and this is corroborated by the girl herself.

Now, how does vaccination come off here? There were ten in the M. Family. Four of them took smallpox. Two out of the four were vaccinated. The father was revaccinated on November 7th, and yet was attacked with smallpox upon the day after the ideal perfection period of protection—twelve days—had concluded, *viz.*, November 20th. Dr. Coupland says nothing about this, and on turning to his official list, I simply find recorded—"vaccinated in infancy"!

#### "THE EARLY HISTORY" A HOAX.

This concludes his "Early History of the Outbreak," from which, he says, "it is possible other cases may have arisen," and, may we not add, could doubtless have been manufactured with equal facility, although Dr. Coupland modestly remarks: "It is not possible to trace the connections between the cases that now began to increase in number"!

Thus it will be seen that Dr. Coupland has been completely hoaxed, and the whole of his "Early History of the Epidemic," with its "connecting links" and illustrating diagram, is a pure illusion from beginning to end. Are we not justified in concluding that the publication of such an invention, issued by Government authority at public expense upon the pages of a Government Blue-book, for no other purpose apparently than to advocate a generally accepted whimsical medical theory, is little short of a public scandal? What confidence, I ask, can the public have in the dogmatically asserted "Conclusions" attached to the so-called "investigation" when they emanate from the pen of an official who has allowed himself to be hoodwinked in so flagrant a manner, and who apparently has never taken the least trouble to test the truth of his statements?

For the next four months after the "singular coincidences" above mentioned, the disease dragged on its weary way; isolated cases sprang up here and there, mainly confined to the south half

of the city, but so distinctly unconnected as to supply scarcely a hook to hang the "personal contact" theory on. They favoured the impression that there was present in the city a certain atmospheric influence which, aided by insanitary conditions more or less associated with the infected houses, produced their combined result upon susceptible inmates.

Out of 1,979 total cases of smallpox, about 1,750 occurred in the south half of Gloucester, although the child population north and south was equally unvaccinated. It is a striking fact which Dr. Coupland is forced to admit, but which he does not attempt to explain. It proves conclusively that there must have been conditions other than vaccination existing in the smallpox-stricken area to account for such a localised disaster.

#### WIDDEN STREET INFANT SCHOOL.

By the 12th February the outbreak appeared to be subsiding; during the previous week there had been but seven fresh cases, making a total of 104 from the commencement of the outbreak. Suddenly the whole city was plunged into a state of terror and panic by the outbreak of smallpox in the Widden Street Infant School, forty-one infants being struck down in the course of six days, making a total of forty-seven in the fortnight. During the remaining four months 1,708 cases occurred, between six and seven hundred of that number being public elementary school-children of 14 years of age and under. Until this school outbreak only 35 children had been attacked, although smallpox had been in the city for nine months.

Dr. Coupland states on page 39:—"To this cause must undoubtedly be attributed the great dissemination of the disease in the city and particularly in the quarters whence the children came." To make matters worse the Widden Street infants were taken from their homes to the smallpox hospital and packed two, three, and four in a bed, with an allowance of but 500 cubic feet of air space each. Only about half of them returned from this death-trap alive.

Dr. Coupland devotes some dozen lines to this catastrophe on page 39, promising "to enter into a fuller detail later on." When we reach the pages of "fuller detail" we find, after the ordinary particulars of name, age, date, etc., are noted, nothing further to solve the mystery of this sudden scourge beyond the wearying reiteration of "vaccinated" and "unvaccinated."

He suggests one solution of the mystery surrounding the Widden Street outbreak on page 119, viz.: That a child "who last attended the school on January 31, the day on which her mother was declared to be suffering from smallpox, quite possibly introduced smallpox into the school." He suggests in addition, on page 127, that perhaps "the contagion was introduced" either by pupil teachers who met there in the evenings or by members of the Sunday school. Dr. Coupland further refers to this subject on page 5 of the "introduction" to his Report, where he says:—"For

my own part, and viewing the subject with as impartial a mind as I can, the conviction is forced upon me that Gloucester would not have suffered as it did had its child population been vaccinated. To my mind it seems a wilful shutting the eyes to this patent fact to assume as has been done that insanitary conditions were responsible for the outbreak in general and for the school invasion in particular."

#### SMALLPOX PICKS OUT THE VACCINATED.

The first point, namely, insanitary conditions generally, I shall deal with presently; the second point I will deal with now. But first let me express my surprise that Dr. Coupland should charge the unvaccinated condition of the child population with the responsibility of the Gloucester epidemic, seeing that of the first cases in 1,086 houses infected with smallpox, no less than 69.8 per cent. of them were vaccinated persons; the unvaccinated, on the contrary, having introduced the disease in only 31.2 per cent. of the houses. Needless to say, this is a calculation which Dr. Coupland does not publish in his Report.

The three public elementary schools under the management of the Gloucester School Board are all situated in the south of Gloucester; in addition there are three large Voluntary Schools in this district. Until the opening of the Linden Road Board School in September, 1895, all the public schools were greatly overcrowded, and further, the Sanitary Inspectors have officially reported that, with two exceptions, every public elementary school in the city had other sanitary defects. The new school relieved to some extent the congestion in one portion of the district, but the remaining schools were still markedly overcrowded, and the building of still another Board School was then being demanded by the Education Department.

#### INFANT SCHOOL OVERCROWDING.

The Widden Street Schools are the oldest of the City Board Schools, and are situated in the midst of a thickly populated neighbourhood. The only department in these schools not acknowledged officially to have been overcrowded at the time of the epidemic, was the infant school in which the smallpox broke out. It was officially stated there were nearly 100 vacant places. The calculation was arrived at in this way: The infant school consists of a long room measuring 98 feet by 20 feet; 32 feet of which are partitioned off for the "Babies," that is, children from three to five years old. There are, in addition, two side class-rooms, measuring 22 feet by 18 feet each. "The Babies' Room" is nearly empty during the winter months; nevertheless, it is not used by the older scholars. Its space, however, is calculated in with the rest of the school space at the end of the year, and the scholars are arithmetically distributed over the whole area. So that, as I proved to the Gloucester School Board (of which I am a member) at a meeting on October 12th last, although by this statistical trick the infant

school as a whole is correctly certified officially to have had an average attendance considerably less than the allowed accommodation, the school registers show that every room but the "Babies' Room" was overcrowded.

A similar condition of things, it is reported, existed in St. Luke's Infant School, where 34 children were equally suddenly struck down with smallpox directly after the outbreak in Widden Street. These, too, were crammed into the smallpox pest house, and 55.8 per cent. of them died. Being a Voluntary School, I cannot test the registers. But a similar explanation and denial of overcrowding, as was publicly given by the Board School authorities, was vouchsafed by the managers of this school; only, in the latter instance, it was stated that the average attendance for the year was but seven below the certified accommodation, which, arguing by the rule I applied to Widden Street, would signify even worse overcrowding than in the latter school. Moreover, the water-closets and urinals were without flushing arrangements, and the drainage was defective.

#### WHY THE INFANTS SUFFERED.

Now on November 1st, 1895, 65 boys of the Widden Street Infant School were certified for promotion to the boys' department, but the Boys' School was already so congested that they had to be accommodated in one of the class-rooms of the Infant School, where, for four months prior to the outbreak, the average attendance mustered over 50 per cent. above the maximum number permitted by the code of the Education Department on that amount of floor space—a space per child which is considered by all leading sanitarians to be insufficient. Infants belonging to the east end of the large schoolroom entered the class-room adjoining that of the boys' in relays for an hour at a time. During the winter months the windows, in consequence of the faulty method of ventilation, were constantly closed. The only remaining "ventilation" being from a swing window communicating with the greatly crowded boys' classroom. The door of the latter room opened into the lobby, the draught of which served to drive the foul polluted air from the overcrowded boys' room into the already polluted atmosphere of the infants' classroom. All the children in turn belonging to the east end of the large schoolroom breathed this atmosphere. The teacher was constantly there, and in spite of the fact of her being vaccinated, she was the first to be taken ill, on February 12th. Within the next fortnight forty-seven of the children who went in and out of that class-room were also struck down, but not another child either in the west end of the large school-room or in any other portion of the infants' department was attacked prior to the schools being closed, though all were equally unvaccinated.

Since my comments upon this reprehensible state of things the Government Inspector from the Education Department has made the following statement in his official report to the Gloucester School Board relative to this infants' school:—"The ventilating

board between the two class-rooms and then into the lobby can scarcely be recognised as a satisfactory method of keeping the atmosphere pure." The Building Committee were also authorised by the Board to investigate the matter, and they delivered their Report on December 13th last, when they made the following statement:—"There is practically no egress for foul air in any of the rooms except that supplied by the fire-stoves," and they advised that the architect shall be requested to suggest structural alterations in order to secure efficient ventilation. Added to this, the drains of this department were blocked, and when examined after the closing of the schools, it became clear they must have been in this condition for a long time. Then, for the first time, an automatic flushing apparatus was introduced.

These serious conditions, combined with the additional stress of certain atmospheric influences, can alone, in my opinion, explain the disastrous outburst of smallpox in this school, which so suddenly converted the general outbreak into an epidemic by spreading panic and terror all over the city. But these matters did not come within the scope of the "instructions" of Dr. Coupland, and therefore, apparently, were not enquired into; consequently with his unswerving faithfulness to his commission, he credits this terrible disaster to the account of the unvaccinated population of Gloucester.

As already quoted, Dr. Coupland says:—"It seems a wilful shutting of the eyes to this patent fact [viz.: that the outbreak *must* have been due to the unvaccinated state of the children] to assume that insanitary conditions were responsible . . . for the school invasion." But now that I have furnished details to which it would seem Dr. Coupland has "wilfully shut" his own "eyes," I leave the public to form their judgment upon the issue which lies between us.

#### WHY THE EPIDEMIC ABRUPTLY CEASED.

Dr. Coupland "proceeded to Gloucester on March 30th, 1896." He "found the epidemic had already attained considerable proportions, that the hospital accommodation had proved inadequate, and that measures for quarantining infected households in their homes had been in a great measure abandoned, owing to the strain on the resources of the Sanitary Department."

As a matter of fact, the epidemic had by that time reached its height, the high-water mark being the week ending April 9th, so that within ten days after his arrival it began a rapid decline; this decline being coincident with the lack of further hospital accommodation, which was packed to overflowing when Dr. Coupland visited the wards on April 3rd; the practical abandonment of "quarantining" regulations which could have only served to increase the epidemic; and the cleansing of sewers and house drains by mechanical flushing and copious showers of rain. The flushing was carried out by pumping water from the River Severn, the city supply being inadequate to give effect to the cry I raised

of "Turn on the tap." During January and February the rainfall had only been .652 and .110 inches respectively; in March, *i.e.*, directly prior to the abrupt decline, it increased to 2.175. With the exception of a corresponding rainfall in June, when smallpox disappeared, there was no further heavy rainfall until September. In July and August it was only 1.215 and 1.630 inches.

Dr. Coupland expresses, on page 5, his amazement at the sudden decline of the epidemic: "It is certainly remarkable," he says, "that it ceased so abruptly." And it must be rather disquieting to those extreme enthusiasts who loudly and recklessly boast in newspaper columns up and down the Kingdom that wholesale re-vaccination from house to house stamped out the disease, to find the Assistant-Commissioner candidly confessing: "The share taken in this by the universal adoption of re-vaccination is difficult to estimate, as it was impossible for me to obtain reliable data of successful re-vaccination." As a matter of fact, the epidemic reached its height on April 9th, and the "Vaccination Committee" did not commence its work till April 27th, when the number of notifications had been reduced to nearly half, and the epidemic was practically over.

The Sheffield epidemic in 1888 came to an equally abrupt termination following upon floods of rain after the long-continued drought of the previous year.

Dr. Coupland remained in Gloucester but a few days when, after visiting the hospital, he departed, leaving a young medical man from Middlesex Hospital in his place. Upon returning three weeks later the epidemic was rapidly dying away. So that when Dr. Coupland says: "For the first six months the cases which arose were traceably connected with one another"; and "the system now generally adopted of quarantining the infected households was carried out with efficiency," we must not assume such assertions to be the result of personal observation, nor could they have been the fruit of personal enquiry from independent sources.

#### QUARANTINING IN LEICESTER AND GLOUCESTER.

The "quarantining" method adopted by enlightened towns in recent years is that known by the name of "The Leicester Method." In November, 1895, the Gloucester Sanitary Authority applied for and received from the Leicester Medical Officer of Health a copy of his quarantine regulations. The circular being "mis-laid," two more copies were supplied in January, 1896. They were again "lost or mis-laid," and in March, 1896, Leicester by request sent "more copies," but it was then too late for adoption.

Briefly, the "Leicester Method" consists in: Removing the patient to hospital if necessary; disinfecting house, clothes and bedding; providing fresh articles if the latter are destroyed; quarantining the inmates of the house, but allowing some of them, under certain conditions, to continue at work during the whole or part of their quarantine period; and urging all the inmates to have disinfectant baths daily at their own homes, or at the hospital.

They are allowed to go about, are encouraged to take walks in the country, and are granted sufficient money to cover rent and maintenance.

Now, what was the "Gloucester Method," which, according to Dr. Coupland, was carried out with such "efficiency"? The quarantined inmates received peremptory orders not to move outside their houses. Policemen were instructed to enforce this regulation. Many were detained in small insanitary dwellings for nine and ten weeks, until one by one they succumbed to the disease. In one instance, a man (whose wife had been compulsorily removed to the Smallpox Hospital two days after her confinement, with death in four days as the only possible issue of such mad officialism) was taken for an early morning walk by a friend in order to rouse him from the melancholia resulting from several weeks' incarceration, when, the merciful act being discovered and reported, the man's quarantine allowance—a miserable pittance of ten shillings per week per family, irrespective of its size—was stopped! He had sent his boy of sixteen to his grandmother's in the country in order to escape infection. The authorities ordered him to return, and shut him up as a prisoner with the others, until he, too, succumbed to the disease.

"Infected" rooms were locked up and the bedding taken away, and the inmates often left huddled together for days in one or two downstairs rooms, in the midst of winter sleeping on floors with what coverings they could obtain before any bedding could be procured. I know of one case where they were left in this condition for a fortnight. Many had difficulty in getting food, and had to beseech neighbours over the walls of their back yards to procure it for them, or a member of the family would have to run the gauntlet of nocturnal spies and venture into the street "when no one was looking," in order to obtain the necessaries of life.

#### SOME NOTABLE ANTI-VACCINATORS.

It was not until March 28, when the epidemic was on the point of declining, that Poor Law Relief was granted, and food taken from house to house; but every man who was starved into accepting it had his name removed from the voters' list.

A quaint incident in connection with this distribution was, that the man appointed to execute the work declined to be re-vaccinated. So upset were the authorities at his moving among smallpox patients without taking the disease, that the Town Clerk wrote the Board of Guardians, and members urged his discharge unless he submitted to the orthodox rite! The man refused, and as no re-vaccinated person had pluck enough to take his place, the Town Clerk's hint was unheeded. Not only this man but the one who drove the patients from their homes to the hospital, as well as the man who carried the infected bedding to the disinfecting apparatus, and even the nurse who attended the patients in the hospital during its early and worst period, all declined to be re-vaccinated, yet none contracted the disease. On the other hand,

at least one of the recently re-vaccinated hospital nurses took smallpox. These were little matters which gravely troubled officialism. A few score unvaccinated children's deaths were but "paying the penalty of the parents' folly," and so far as the "glorious cause of vaccination" was concerned—

"It was a famous victory."

"Obstinate, ignorant fanatics" like the above were a plague to the official bosom, for did not officialdom declare, "Gloucester nurses were saved from 'decimation' because they were re-vaccinated"? And would not the "man in the street" enquire: "Why then did not 'decimation' pursue those unregenerated Philistines?" Several of the hydropathic nurses who were in the thick of the smallpox from first to last, and who were not vaccinated, did not contract the disease; on the other hand, three or four of them who were re-vaccinated prior to undertaking the work fell preys to it. Dr. Coupland condemns this system which resulted in a death-rate of only 10 per cent., and in speaking of the nurses on p. 54 he says contemptuously: "Their devotion was in many (*sic*) instances rewarded by themselves being attacked with smallpox," but he omits to say that with two exceptions the sufferers were all recently re-vaccinated!

#### THE STROUD ROAD HOSPITAL.

On April 3rd Dr. Coupland paid his first visit to the Smallpox Hospital in Stroud Road. He writes (page 25):

"The primary object of my visit being to see the patients, I did not think it incumbent upon me to inspect the hospital or enquire into its administration."

And on page 5 he says:

"It was no part of my mission to enquire into methods of treatment."

We may well ask: What *did* Dr. Coupland come to Gloucester for? The Gloucester Medical Officer of Health could surely have stated who was vaccinated and who was not. This was part of his duty. And the anti-vaccinators could have checked his statistics as they have been obliged to check Dr. Coupland's. Three parts of the smallpox cases had already been notified and tabulated before Dr. Coupland left London, and judging by the inaccuracies already pointed out, the result in the hands of local officials could scarcely have been worse, whilst many hundreds of pounds would have been saved.

On page 129 Dr. Coupland says he was "Much assisted by a list of the cases compiled by Mr. Pitt, the medical officer in charge"—a gentleman qualified the year before, and who had had no previous experience of smallpox. "There had been no register kept (!) but brief records were taken by him of the cases." Considering "the overwhelming amount of work which fell to his lot," and the fact of "no register being kept," the public are not likely to be inspired with much confidence in Dr. Coupland's authoritative Government Report of at least 500 out of the total 700 hospital

cases, which appears to be a collation of the "brief records" of an inexperienced and overworked medical official.

On page 25 is a list of the hospital blocks (which were recklessly built in the centre of a populous neighbourhood) and "the number of beds for which each block was intended." Even here Dr. Coupland's *penchant* for making fatal mistakes attends him. After correctly stating that Blocks 1, 2, and 3 were built for sixteen beds each, he declares that Blocks 4, 5, 6, and 7, of precisely the same size, were built for twenty beds each. If his own personal inspection was not to be trusted, an enquiry at the surveyor's office would have saved him such a serious blunder.

#### AIR SPACE—AN OFFICIAL OPINION.

The air-space allowed for each bed in the original three blocks was 1,250 cubic feet; by adding four extra beds to each block, the air-space would be reduced to 1,000 cubic feet. The very least which should be allowed in smallpox disease is from 2,000 to 3,000 cubic feet.

But this is not all. On page 130 is recorded the actual number of beds in each block on the day Dr. Coupland visited the hospital. No. 1 had been turned into an administrative department; block 2 contained twenty-three beds; blocks 3, 4, and 5 contained as many as twenty-five beds each; and block 6 was actually packed with no less than thirty-two beds. Dr. Coupland naïvely remarks:

"Thus there were 158 patients to 130 beds; but it is right to say that there were two, three, or even four children occupied one bed . . . and the capacity of the beds was of a size admitting of their accommodation."

Surely the Royal Commission were not so dense as to require to be told in this confidential way that a surplus of twenty-eight patients indicated more than one occupant of a bed! Nor need the capacity of the beds to hold the number be doubted. The Black Hole of Calcutta was sufficiently capacious to "accommodate" its 146 victims. But why does Dr. Coupland thus disingenuously seek to lead his readers to suppose there was only a total surplus of twenty-eight patients, and altogether ignore the startling fact, which a sanitarian might have been expected to notice at a glance, that 130 beds were packed into wards intended only for 80, and that upon the space intended for only 80 patients—but which should have held no more than 40—no less than 158 living souls were concentrated?

Although the amount of air space was reduced to but 500 cubic feet per patient, we find our Government investigator, without taking the trouble to be accurate, coolly declaring on p. 25:—"The wards struck me as being provided with ample cubic space"!

#### THE HEMPSTEAD HOSPITAL.

The Hempstead Hospital—an old disused cholera hospital just outside the city—was even in a worse condition: 55 patients occupied a space intended only for 24. Block A, intended for eight

beds, Dr. Coupland inaccurately states was "intended for" 16; and Block B, built for 16 beds, he actually states "was intended" for 38! Surely he can never have been near the place! Water was with difficulty conveyed in carts to this inferno. There was no drainage, and the excreta had to be burned on a piece of ground within a few yards of the hospital doors. But it was not consistent with Dr. Coupland's "instructions" to draw attention to these small matters.

Such was the terrible condition of things at last, and so high was the hospital death-rate, that crowded and excited public meetings were held and a riot seemed imminent, when the City Council, in a state of panic and bewilderment, applied to the Local Government Board for instructions, and Dr. Brooke, of the Thames Ambulance Service, was hastily summoned to take charge of the hospitals.

#### DR. BROOKE'S ARRIVAL AND REPORT.

He entered upon his duties on April 28th (three weeks after Dr. Coupland's visit), and reported to the Sanitary Committee on May 1st. Every effort was made by the City Council to suppress this Report; its very existence was officially denied; and it was not until the citizens contemptuously rejected the old members of the Council who again sought their suffrages at the Municipal Elections in November, 1896, and sent an entirely new set of men to the Guildhall, with the Hon. Sec. of the Anti-Vaccination League at the head of the poll with an unparalleled majority, as the representative of the ward which had borne the brunt of the smallpox, and where one in every eleven of the inhabitants had suffered from the disease, that this Report was dragged from its hiding place and brought into the light of day. Of the Stroud Road Hospital the Report declared:—

"The site was absolutely unsuitable . . . the structural arrangement was devoid of any plan, system, or method, and rendered the satisfactory working of the hospital a practical impossibility . . . the sexes could not be separated in separate buildings. . . . From a sanitary point of view the whole administration of the Hospital had been shockingly neglected. . . . The laundry accommodation was deficient. . . . It was impossible to obtain a sufficient supply of clean linen, and they were a month behind with the washing. . . . There was a total absence of fire extinguishing apparatus and no fire buckets . . . . In the various nooks and corners about the place there was a great accumulation of rubbish. . . . The Ambulance Shed was foul and dirty, and smelt most offensively, and round many of the Wards heaps of decaying animal and vegetable matter—bones, bread, vegetables, etc.—and sometimes a heap of foul linen and soiled dressings soaked in discharges. . . . In one of the Wards neither kitchen, scullery, nor pantry, and in the bath-room a miscellaneous collection of dirty dinner things, patients' clothing, and soiled linen."

In regard to the Hempstead Hospital he warned the Sanitary Authority that they were "incurring a great and serious responsibility in keeping it open. . . . Both patients and staff were detained there at a grave risk." In conclusion he advised, "In the interests of the inhabitants and the welfare of the patients that

both hospitals should be closed as soon as possible, and tents erected elsewhere."

#### HOW PATIENTS WERE TREATED.

The condition of the patients was not mentioned in this brief Report. The second Report giving these details is not yet forthcoming. The City Council begrudge paying for it, and the Local Government Board having declined to investigate the scandal, also refuse to unearth the dark record of a period which has burnt itself into the very souls of the people of Gloucester. Until the end of April the wards were under-manned, the nurses were mostly untrained, the earliest cases were not visited by a medical man for days and even weeks together; the whole time the patients lay in bed (prior to Dr. Brooke's arrival) not a drop of water was allowed for their fevered skins, not even for their hands; the patients must have been simply caked with filth. But nothing of this sort came within the scope of Dr. Coupland's "instructions." "It was not incumbent upon him to enquire into administration." If he does mention "abscesses" upon the body, or eyesight destroyed, or other horrible complications, presumably largely due to neglect, they have no voice for his official ears, beyond the fact that the sufferers were either "unvaccinated" or "no trace of the alleged infantile vaccination could be detected upon the arms."

On p. 5 he states, "Certainly I myself saw nothing in any of my visits which could be ascribed to negligence of treatment." But it must be remembered it "did not strike him" that four patients in one bed, nor sixteen beds packed in a ward too small for eight, indicated a deficiency of air-space. And moreover, he only visited the wards on April 3rd; when he again visited the hospital in May, he admits (p. 5) "The staff had been re-organised and the whole arrangements improved." If the character of treatment prior to Dr. Brooke's arrival was such as to merit the high eulogium which Dr. Coupland pronounces upon those in charge (although not "instructed" to do so) it would be very interesting to read a manual on "smallpox nursing" from his pen.

#### INSIDE AND OUTSIDE HOSPITAL.

The total hospital fatality was 50 per cent. greater than that which obtained among patients treated at their own homes. Dr. Coupland tries to escape this damning fact by declaring that the "worst cases [malignant and confluent] were sent away to the hospital by preference." The statement is untrue. There were 88 more of these cases outside than inside the hospital according to his own figures. I have made a careful calculation, 1st, of the period prior to Mr. Pitt's appointment on January 24th, 1896, when 59 cases admitted up to that time had only a caretaker and his wife and an occasional odd woman or two to look after them; 2nd, of the period during Mr. Pitt's charge until Dr. Brooke's appointment on April 28th; 3rd, from the latter date until the end.

In each period the malignant cases record an equal percentage inside and outside the hospital. The percentage of confluent cases is also practically the same in every period but one, and that period was during Mr. Pitt's *régime*, when there was no selection whatever of cases, but every case that could be taken to the hospital was removed there until it became so crowded that no more could be admitted.

Although it was "not incumbent upon him" to enquire into "administration," Dr. Coupland enters into a specious argument on p. 135, which ends in a flagrant contradiction of the common-sense fact that the overcrowding and mismanagement of the hospital increased the malignancy or fatality of the epidemic. His argument is that "mild or discrete smallpox can never become converted into one of confluent or malignant, whatever the environment or mode of treatment." As, therefore, the percentage of confluent cases (around which the battle of life and death wages) was higher in the hospital than outside, the death-rate was likewise higher; the type of disease was not created in the hospital, but was settled before the patient entered the hospital at all.

#### A HISTORICAL ANSWER.

With all due deference to Dr. Coupland, I beg to say, without fear of contradiction by any smallpox authority in the kingdom, that smallpox can nearly always be diagnosed, *in genere*, at a stage when it is not easy to say whether it will eventually be discrete, confluent, or hæmorrhagic or otherwise malignant. The eventuality depends upon two things: the patient's constitution and the management of the disease. His hasty and dogmatic assertion is directly contradicted by the historical case of Queen Mary,\* which was distinctly one of discrete smallpox, subsequently turning to the hæmorrhagic form, doubtless as the result of ignorant treatment. We have another case in that of her uncle, the Duke of Gloucester, in Sept., 1660. The "brief details" of the medical officer in charge of the hospital during the three months these cases were in the ascendancy—nearly 50 per cent. higher than the corresponding cases outside—are utterly valueless in forming any scientific judgment upon the question. Even Dr. Coupland's own tabulation of cases seen by himself is worthless, and affords no basis such as would enable an instructed student in epidemiology to handle the data independently. The one solid fact remains which Dr. Coupland is compelled to acknowledge—that vaccinated or unvaccinated, young, old, or middle-aged, in every period, stage, and type of the disease, the death-rate was higher in the hospital than it was outside.

But dreadful as was the percentage of severe or "confluent" cases—53.8 per cent.—in the hospital during the period named,

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\* See "History of Epidemics in Britain," by Dr. Charles Creighton, vol. ii, pp. 459-60.

yet the average percentage of such cases outside was also terribly high. It reached the enormous rate of 37 per cent., nearly 50 per cent. higher than the proportion of such cases in the outbreaks of Warrington, Dewsbury, or London, and about 120 per cent. in excess of unvaccinated Leicester!

#### LOCALISATION OF THE EPIDEMIC.

It stands to reason then that there must have been conditions in Gloucester outside the question of vaccination to account for such an awful state of things. The fact, too, that only about 200 cases of smallpox occurred beyond the south half of Gloucester points to a similar conclusion. There is but one answer, namely, the insanitary state of the district to which the smallpox was limited, and the aggravation of the disease by irrational quarantining and mismanagement.

Now on p. 12 Dr. Coupland says:—"There is not sufficient evidence to support the contention that defective drainage or other insanitary condition was responsible for the development of the disease, and for its disproportionate incidence in the South Hamlet. But the conditions which favour contagion were abundantly present, especially the retention of a large number of cases within their homes, and in many instances also the impossibility of isolating the attacked within the house."

Excepting a reference to "the position of the hospital" in this district, Dr. Coupland advances no other argument besides those mentioned above to account for the limited range of the outbreak. But on p. 129 he unwittingly provides his own answer to such a specious contention. He shows that: "There were 425 households from which the *initial* cases of smallpox were sent to hospital. In 164 of these houses 352 additional cases occurred. Hence there were in the houses from whence the earliest cases were removed:—

Single Cases	...	...	...	261 or 61.4 per cent.
Multiple Cases	...	...	...	164 or 38.6 " "

Contrasting these figures with those of the attacks in houses where the *initial* cases were *not* removed to hospital . . . there were 673 households; in 268 of which additional cases occurred:—

Single Cases	...	...	...	405 or 60 per cent.
Multiple Cases	...	...	...	268 or 40 " "

The difference between the two series in the number of houses infected is barely 2 per cent."

If, therefore, the result was practically the same whether the initial cases were removed to hospital or not, how on earth can "the retention of a large number of cases within their homes" have spread the disease in the South Hamlet? It is clear we must look for some other causes which the official writer refrains from recognising.

An eighth part of the whole epidemic occurred in three streets,

New Street, Alma Place, and Alma Terrace. The last terrace consists of eight tiny houses with four rooms. From one house the inmates escaped disease by fleeing to another part of the city. They were supplied with water declared by the Medical Officer of Health to be "contaminated by sewerage and other pollutions from its source to its delivery." There were no flush-boxes to the closets, their contents had usually to be emptied on to the gardens, owing to blockage of drains. There were twenty-five cases of smallpox in these seven houses. In Alma Place, consisting of 114 houses, there were 132 cases. The houses were similar in size and most of them in the same condition. In all similarly long narrow streets with rows of small, poor houses, the drains were on the whole defective and smallpoxrife. The drainage of three or four houses passed beneath the floors of one; the joints of the pipes were not cemented, nor were they laid upon a cemented base. In George's Row, Morton Street, also houses of four small, low-roofed rooms, which had a case of smallpox in every house but one, the w.c.'s are built up in a corner of the downstairs back-room, they "ventilate" into the room itself in which the family cooking is performed, these rooms possessing one small window which does not even open. In miserable hovels such as I have described there were instances of as many as five, six, seven, eight, nine, eleven, and even twelve cases of smallpox respectively in a single house; but the consideration of all this came not within the scope of Dr. Coupland's "instructions." Space will not permit of further detail upon this point; we will turn from the house drains to the sewers.

#### LACK OF FLUSHING POWER.

For years Gloucester has suffered from a short water supply; this deficiency was rendered critical in 1895-6 (the epidemic years) owing to the rainfall being less than it had been for thirty years. The sewers and house drains were not flushed and the man-holes in the streets were belching sewer-gas. Dr. Coupland departs from his "instructions" in order to discredit patent facts. To upset the charges of bad drainage, he quotes a long Report of the City Surveyor concerning the course of the sewers and the doing away with old culverts in 1885, which has no bearing upon the point at issue. He allows himself to be "put up" to fight Lieut.-Gen. Phelps over a trumpety point as to re-flux of sewage through a certain main, although his "instructions" did not render this "incumbent." To controvert the statement as to stinking manholes he declares that he never "observed any mal-odorous emanations" himself, although he "traversed the streets very many times," for which he has earned a large share of well-merited public ridicule, seeing that the stinking man-holes were plugged by order of the Sanitary Authority prior to the commencement of his perambulations!

The best answer to Dr. Coupland's vague apologetics is the fact that many thousands of sanitary defects have been officially

reported and remedied since the epidemic. According to a statement by the Medical Officer of Health there was greater sanitary activity in 1897 than for ten years past. A new supply of good water has been obtained; and the main sewer, which extends throughout the entire length of the principal portion of the smallpox district, has been taken up and re-laid at a lower level, so as to allow a better fall for the side streets, which, with other sewer improvements, has cost thousands of pounds. Thus is proved the utter worthlessness of Dr. Coupland's white-washings and laboured excuses on behalf of Gloucester Officialdom.

#### WHY GLOUCESTER SUFFERED.

I cannot better conclude my criticism than by quoting the unexpectedly frank statement of Dr. Coupland on page 9, where he says:—

“In almost all respects [unvaccinated] Leicester suffered much less than either Dewsbury or Gloucester; the disease in that town hardly ever assumed the true proportions of an epidemic, its mortality scarcely affected the death-rate for the year, and the attack rates of every period of life, and amongst the vaccinated and unvaccinated alike, were below the mean of the three places taken together. Now, in one particular, without a doubt, Leicester does enjoy an advantage over either Dewsbury or Gloucester, and that is in respect to its sanitary government.”

Thus Dr. Coupland himself answers the question why unvaccinated Gloucester had a smallpox death-rate of over 21 per cent., while still more unvaccinated Leicester had a death-rate of only 5. It will take more than all the sophistry of Dr. Coupland to explain away this pregnant fact, or to get rid of the moral it conveys. In less than another fifty years, his “Report on the Outbreak of Smallpox in the City of Gloucester” will have been placed among the curiosities of exploded fallacies, to rank with the literature on “The Touch for the King's Evil” and Joanna Stephen's “Cure for Stone.” Gloucester provided material for the settlement for ever of the vaccination question, and for the exposure of the folly of the superstitious cowpox rite, which Jenner adapted a century ago from the folk-lore of the dairymaids of its county. With the inexhaustible resources of the Royal Commission at his command, Dr. Coupland might have done a service on behalf of the children of this country, and on behalf of long-suffering conscientious men and women the world over, which would have brought honour to his name, and have yielded him from the hearts of his countrymen and women a far richer reward than any he may have gleaned from the coffers of the State. He has lost his opportunity. In the service of an empirical creed, and under the plea of obeying “instructions,” he has compiled a tissue of absurdities and contradictions which degrade the name of Science, and cover his conclusions with ridicule and reproach.

## APPENDIX TO SECOND EDITION.

### THE UNVACCINATED CHILDREN.

Perhaps the most specious argument recently made use of by the apologists for Vaccination is the following table of figures extracted from Dr. Coupland's Report:—

SMALLPOX IN CHILDREN TO 10 YEARS OLD.					
Vaccinated.			Unvaccinated.		
Attacks.	Deaths.	Fatality. per cent.	Attacks.	Deaths.	Fatality. per cent.
26	1	3.8	680	279	41.0

It is at the same time declared that the one vaccinated death was a case of very doubtful vaccination. I give particulars on page 8. The reader may judge.

At first sight the comparison of the figures looks startling, until it is remembered that Gloucester contained practically an unvaccinated child population, and that there were but few vaccinated to suffer.

Now, I have already shown in the preceding pages the untrustworthiness of Dr. Coupland's statistics and statements, nor are the above any exception. The figures are all wrong. I have the names and addresses of 116 vaccinated children up to 10 years of age who were attacked with smallpox in the epidemic, of whom 27 died, a fatality of 23.2 per cent. Whereas, I make the unvaccinated fatality even higher than that of Dr. Coupland, namely, 50 per cent.

Seeing that for the seven years prior to the epidemic only four per cent. of the child population of Gloucester was vaccinated, it will be seen that the vaccinated attack rate bears a very high proportion to the vaccinated population; and as far as one can judge in such a case, the attack rate was as high as, if not higher, than that of the unvaccinated.

The death-rate of the unvaccinated was higher than that of the vaccinated, but the ages of the latter class were of a higher average. The "unvaccinated" deaths included a great many babies in arms; sickly ones that no vaccinator would dare to touch with his lancet; and even infants only a few hours old born in the pestilential atmosphere of the smallpox hospital. All such anomalies were made to swell the "unvaccinated" list, and to pile up its death-rate. Official vaccination statisticians can find no room for a third class! Eliminate these and the death-rate of vaccinated and unvaccinated would more nearly approximate.

The death-rate in both classes was excessive, forming a combined

total of 39 per cent., which is largely attributable to the introduction of the disease into the over-crowded elementary schools, and the terrible hospital conditions described on pages 23-26. In the eighteenth century when everybody was unvaccinated, the statistics of outbreaks among children show death-rates of only 14.6 per cent., and even as low as 6 per cent.

That vaccination is no protection in a well-vaccinated population is proved by the Berlin epidemic of 1871-2, when 2,240 successfully vaccinated children under 10 years of age were attacked with smallpox, of whom 736 died, *i.e.*, a fatality of nearly 33 per cent.

Whereas it is equally conclusively shown that the lack of vaccination does not predispose to the disease, seeing that in unvaccinated, but well sanitated Leicester, during the smallpox outbreak of 1893-4, there were only 13 deaths in unvaccinated children under 10, and that 50,000 unvaccinated children passed through the epidemic unscathed.

The localised condition of the Gloucester epidemic, as mentioned on p. 17, is conclusive evidence that neither vaccination nor non-vaccination had anything whatever to do with the subject.

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Call no. [1898? ]

Inoculation  
Vaccination

